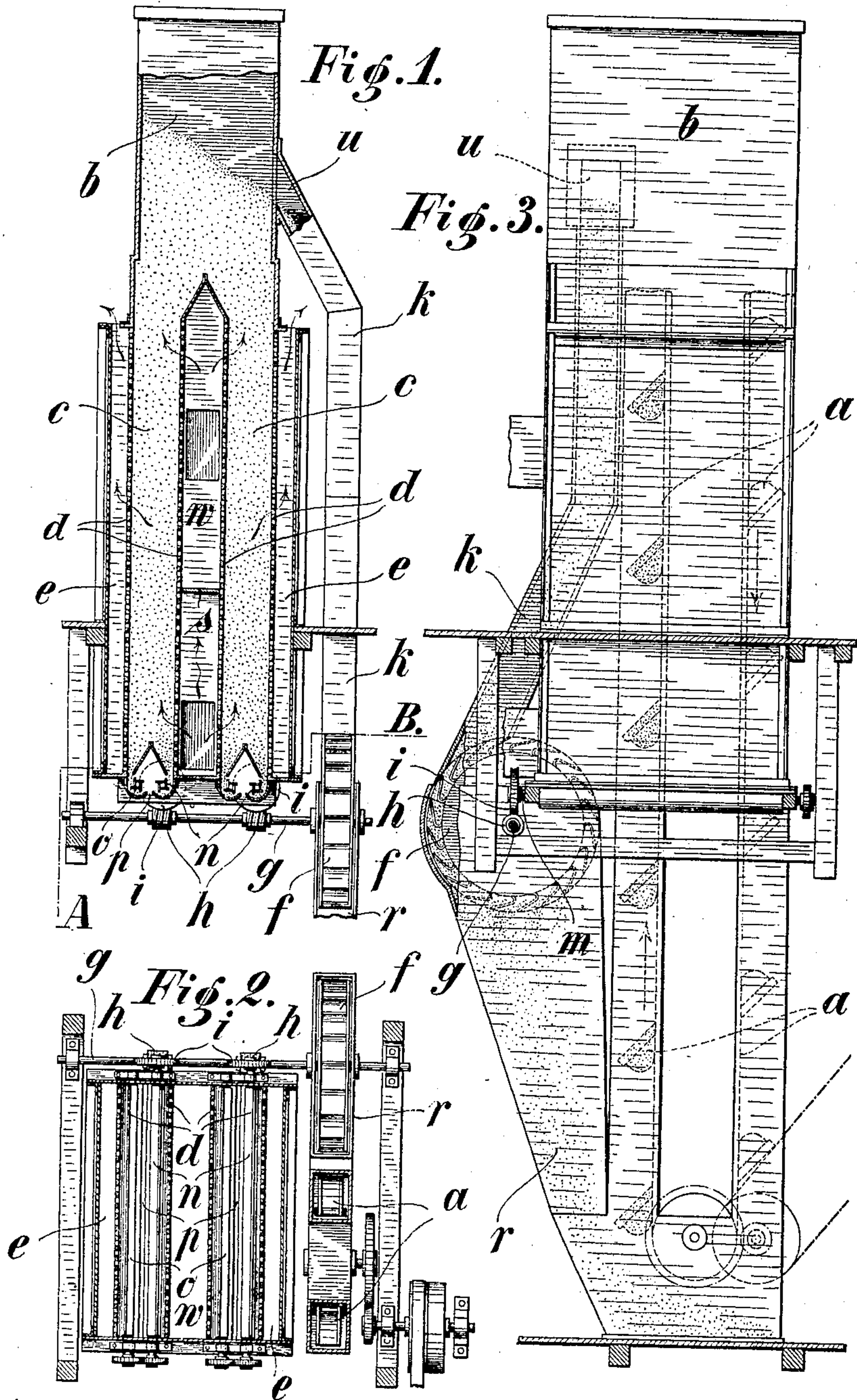


No. 865,546.

PATENTED SEPT. 10, 1907.

D. UHLHORN, JR.
DRYING SHAFT FOR CORN.
APPLICATION FILED APR. 9, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

DIEDRICH UHLHORN, JR., OF GREVENBROICH, GERMANY.

DRYING-SHAFT FOR CORN.

No. 865,546.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed April 9, 1907. Serial No. 367,212.

To all whom it may concern:

Be it known that I, DIEDRICH UHLHORN, Jr., a citizen of Germany, residing at Grevenbroich, Germany, have invented new and useful Improvements in Drying-Shafts for Corn, of which the following is a specification.

This invention relates to a drying shaft for corn, which is distinguished by a device, in connection wherewith the discharging of the dried corn is effected in the same degree as the wet corn is fed in.

10 In the accompanying drawing: Figure 1 is a longitudinal section of the drying shaft, Fig. 2. a transverse section and Fig. 3. a side elevation.

In the example illustrated the corn to be dried is raised in any preferred manner by means of an elevator *a* and shot into a receptacle *b*. This receptacle is divided at its lower end into two chambers *c*, the sides *d* of which consist of finely perforated sheet metal, wire gauze or the like. Between the two chambers *c*, *c* which are filled with corn a wind-chest *w* is arranged, 20 which is divided into two compartments, by the horizontal partitions *s*. Into the upper compartment heated air is blown by a suitable blast, cold air on the other hand being blown into the lower compartment. The air sweeps in the horizontal direction through the corn that is in the chambers *c* and therefrom enters the two chambers *e*, from which it passes out at the top, and is conveyed by a suitable pipe to the outer air. By means of the heated air the corn is quickly dried, while the cold air chiefly effects the cooling of the 30 corn. The receptacle *b* is connected with a special vertical or oblique pipe or chute *k*, which is separated from the receptacle *b* by an overflow pipe *u*. If the receiver is filled up to the overflow pipe *u*, the corn which is further fed flows through the passage *k* and falls 35 on to an overshot wheel *f* or a turbine wheel or the like, causing it to rotate. The corn running off the wheel is conveyed to the elevator again through the chute *r*. On the shaft *g* of the wheel *f* are fixed the two worms *h*, which engage with the two worm wheels 40 *i*. The latter are keyed to the shaft *m*, carrying the

discharging vanes *n*. When the drying shaft is suitably filled and the over-running corn actuates the wheel *f* the discharging vanes *n* are set in rotation thereby through the medium of the worm gear and the discharging vanes *o* through the medium of spur 45 wheels, whereby the corn is discharged at *p*. The discharging device is so arranged that it can discharge at least as much corn as the elevator raises. If the corn sinks in the receptacle *b* below the overflow pipe *u*, nothing more falls through the pipe *k* and the wheel *f* 50 and therewith the discharging device remains stationary. The drying shaft thus remains always filled up to the overflow pipe *u* and only allows as much corn to run away below at *p* as is conveyed to it at the top by the elevator *a*. 55

What I claim is:—

1. The combination with a drying shaft for corn of an overflow pipe and chute connected therewith, a vane wheel adapted to be actuated by the corn falling through the chute and discharging means in the drying shaft operatively connected with the overflow wheel in such manner that the discharge from the shaft is controlled by the overflow substantially as described. 60

2. A drying shaft for corn with automatically regulated discharge, the distinguishing feature being the arrangement on a receptacle *b* which receives the material to be dried, of an overflow pipe *u* and a special chute *k* and the arrangement below the chute *k* of an impulsion device *f* that is actuated by the corn falling through this pipe and actuates the vanes *n* *o*, or the other discharging devices, by which the discharging is effected, and consequently is only in action as long as the receptacle *b* is filled beyond the overflow pipe *u*. 65 70

3. In a device of the character described, a drying shaft, a communicating overflow pipe, means for discharging the dried grain from the shaft, and grain-actuated means controlled by the pipe for operating the grain discharge means, substantially as specified. 75

Signed by me at Düsseldorf, Germany, this ninth day of March, 1907.

DIEDRICH UHLHORN, JR.

Witnesses:

ALFRED POHLMAYER,
M. ENGELS.